1) Manitoba
2) Health
Annual

Minister of Health

Room 302
Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

1989 Annual report of fluoridated community water supplies in Manitoba.
Summary

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MINISTERIAL STATEMENT

Last year, three more communities in Manitoba chose to provide their residents with the benefits of fluoridated water. Now, more than 750,000 Manitobans have the protection offered by this safe and simple process.

Adjusting the level of fluoride in drinking water has been shown to reduce dental decay by up to sixty percent, and I encourage all Manitoba communities to take advantage of this method of reducing dental disease.

Donald W. Orchard

over

91-04266/

Title: [Summary of the 1989 annual operating report of fluoridated water supplies in Manitoba]

(Complete copy of the annual report exists at Dental Health, 3rd flr. 800 Portage Ave.)
Tel: 945-6685

INTRODUCTION

In 1989, 73 Manitoba Communities, representing 777,000 people received artificially fluoridated drinking water from 51 water treatment plants.

All of the above 51 water treatment plants participated in Manitoba Health's Fluoridation Monitoring Program.

This report consists of a summary of how the Fluoridation Program performed, a brief description of improvements accomplished and operational problems resolved along with the tabulated results from the Sampling Program. Letters of explanation were sent to the individual water plant owners. In a few cases, suggestions were made regarding how the operation of the fluoridation equipment could be improved.

Four water treatment plants serving approximately eleven thousand residents installed and began operating fluoridation equipment with the assistance of Manitoba Dental Health in 1989.

DISCUSSION

1. Participation In The Program

A total of fifty-one water treatment plants provided fluoridated water to 73 communities and a total population of over 777,000. Not included in this figure are the rural residents who consume water hauled from a community fluoridated water supply. Approximately 95% of the population of Manitoba served by a public water system receive fluoridated water.

Manitoba Dental Health continued to offer financial and technical support to Manitoba communities wishing to install fluoridation systems on a first-time basis. The waterworks operations were evaluated, systems designed and equipment specified. Once the equipment was purchased, assistance in installation, start-up and operation was provided by Manitoba Dental Health Technical Staff.

Manitoba Health continued to provide technical support to all water treatment plant operators in order to ensure an optimum fluoride level was regularly achieved in a safe manner.

2. New Systems

The communities of Flin Flon, Morris, Sanford and Wabowden installed fluoride feed equipment with Manitoba Dental Health assistance and are now successfully participating in the Manitoba Health Fluoride Monitoring Program.

3. Up-dating Of Equipment

The communities of Austin, Carman and Hartney replaced their manual, or batch mix fluoride feeders with fluoride saturators. This was done at the suggestion of, and with technical assistance from Manitoba Dental Health Technical Staff. Updated monitoring equipment was purchased at the suggestion of and with assistance from Manitoba Dental Health in the communities of Dauphin, Morden and Virden.

4. Monitoring/Surveillance Program

The purpose of this program is to ensure that the recommended fluoride level is maintained in Manitoba drinking water.

The operation of all artificially fluoridated water supplies was monitored by Manitoba Dental Health in 1989. This Monitoring Program consists of the submission to Manitoba Health of a bi-weekly composite sample along with a record of chemical feed data and daily recordings by the water plant operator.

Samples were analyzed by the W.M. Ward Technical Services Laboratory All data was examined and tabulated by Dental Health Technical Staff who then provided assistance in resolving any operational problems.

Typical operatoring problems encountered are:

- out of date or defective monitoring equipment
- out of date or malfunctioning fluoride feed equipment
- shortage of supplies - fluoride chemical, testing materials
- shut-down of fluoridation systems
- break-down of fluoridation systems
- new water plant operators requiring training

Twenty-six of the 51 treatment plants were visited/inspected at least once in 1989. All community administrative staff, water plant operators, as well Water Services Board staff were co-operative and helpful.

In addition, co-operative technical assistance was received from the Chief Public Health Engineer and W.M. Ward Laboratory staff.

Water plants were also visited on a routine basis for the purpose of encouraging preventive maintenance of the fluoridation equipment, explaining the need for careful operation and stressing the importance of good communication. Evidence of appreciation for this assistance is apparent in part from the number of letters and telephone calls received from the water treatment plant operators.

It should be noted that since water fluoridation in Manitoba is not mandatory, the Department of Health relies on an atmosphere of good will between the department and water plant owners and operators, for the purpose of achieving proper fluoride levels.

A total of 1,224 fourteen-day composite samples and accompanying report sheets were submitted by the water treatment plant operators.

5. Performance Of The Monitoring/Surveillance Program

Of the 1,224 bi-weekly composite samples submitted by water treatment plant operators, 1,035 or 85 % contained fluoride levels within the correct operating range. The remaining 15% of the samples outside the optimum operation range recorded 47 slightly high or non-representative, with 142 below the optimum operating range.

The above data is taken from Appendix "E" on page 126 (Fluoride Levels/1989), and Table II on Page 9 (Water Fluoridation Program Results - Summary)

Water Plants Which Continued To Maintain Excellent Fluoride Results

Austin, Melita, Pilot Mound, Steinbach, Winkler, Winnipegosis, Gilbert Plains, and Gimli Industrial Park.

Water Plants Which Continued to Maintain Acceptable Fluoride Results

Carman, Erickson, Hartney, Morden, Pinawa, Portage La Prairie, Roblin, St. Jean, Souris and The Pas.

Water Plants Which Improved To An Acceptable Level Of Performance Over The Previous Year

Baldur, Brandon, Cranberry Portage, Dauphin, Gladstone, Lac Du Bonnet, Letellier, Manitou, McCreary, Neepawa, Reston, Russell and Treherne.

Water Plants Reporting A Decreased Level Of Performance And Requiring Assistance

Birtle, Boissevain, Deloraine, Gillam, Gimli, Hamiota, Killarney, Minnedosa, Rivers, Rossburn, Ste. Rose, Shoal Lake, Swan River, Virden, Shilo and Sandy Bay.

Not included - New systems (Morris, Sanford and Wabowden) and the City of Winnipeg.

NOTE: The City of Winnipeg shut down the fluoridation system in August for the purpose of installing new equipment which is scheduled for start-up in the spring of 1990. The submission of bi-weekly samples was continued and since this data is not representative of a fluoridated water it was not included in the statistical analysis of the program.

The City of Flin Flon began fluoridating during the last 2 weeks of 1989. Results are not inlcluded above.

TABLE 11

TOWN	NUMBER OF SAMPLES WITHIN LIMITS	NUMBER OF SAMPLES ABOVE LIMITS	NUMBER OF SAMPLES BELOW LIMITS
ALTONA	21	1	4
AUSTIN	22	1	0
BALDUR	26	0	0
BIRLTE	11	13	2
BOISSEVAIN	18	3	3
BRANDON	25	0	0
CARMAN	23	3	0
CRANBERRY	26	0	0
DAUPHIN	26	0	0
DELORAINE	19	0	7
ERICKSON	22	4	0
GILBERT PLAINS	22	0	0
GILLAM	8	1	9
GIMLI (TOWN)	19	1	5
GLADSTONE	26	0	0
HAMIOTA	18	0	8
HARTNEY	24	0	2
KILLARNEY	15	2	9
LAC DU BONNET	26	0	0
LETELLIER	24	0	0
MANITOU	25	0	0
MELITA	21	0	0
MINNEDOSA	16	1	6
MORDEN	25	0	1
MORRIS	17	0	4
McCREARY	24	0	0
NEEPAWA	26	0	0
PILOT MOUND	26	0	0
PINAWA	21	4	1
PORTAGE	25	0	1
RESTON	26	0	0
RIVERS	14	0	8
ROBLIN	19	0	7
ROSSBURN	12	0	12
RUSSELL	26	0	0
ST. JEAN	24	0	2
STE. ROSE DU LAC	19	4	3
SHOAL LAKE	16	4	6
SOURIS	25	0	1
STEINBACH	25	0	0
SWAN RIVER	22	1	3
THE PAS	22	4	0
TREHERNE	24	0	0
VIRDEN	15	0	11
WINKLER	26	0	0
WINNIPEG	6	0	0
WINNIPEGOSIS	26	0	0
GIMLI IND. PARK	26	0	0
CFB SHILO	9	0	14
SANDY BAY	3	0	7
WABOWDEN	1	0	9
FLIN FLON	1	0	0
R.M. OF MACDONALD	0	0	0
TOTAL	1034	47	145

6. Operators' Seminar

Three, one-day seminars were organized by Dental Health staff for water treatment plant operators for a first time in 1989.

The objective of the seminar was to demonstrate and encourage the maintenance of the proper amount of fluoride in a community water supply.

(See appendix "D", page 123 for a seminar outline.)

The seminar was endorsed by the Western Canada Water and Waste Water Association and the Manitoba Water and Waste Association and attended by 85 water treatment plant operators, maintenance personnel, and town superintendents and a few city engineers.

Speakers partaking in the seminar included experts from the United States Centers for Disease Control, the Illinois Department of Health, and the Manitoba Government (Ward Laboratory; Environmental Health Services; Workplace, Safety, and Health; and Dental Health).

The Seminar was considered very successful based on the increase in knowledge illustrated by results from a pre and post test, as well as positive written and verbal comments made by those attending. These results are illustrated in the Table on page 14 .

7. Promotion

Increased promotion of water fluoridation by Dental Health staff at the community level resulted in the installation of fluoridation systems in four communities: Flin Flon, Morris, Wabowden and Sanford.

In the case of Flin Flon a public referendum was held before fluoridation was accepted.

Promotion included initial contacts in non-fluoridating communities, presentations to community Councils (both public and in-camera) and local interest groups. Newspaper articles promoting fluoridation and announcing systems' start-up, along with congratulatory letters and letters of notification to the proper authorities originated from Dental Health.

In addition to the attached letters and data sheets which were sent to owners of fluoridating water plants (Appendices B & C), Certificates of Commendation signed by the Minister of Health and Executive Director of Dental Health were issued to the following water treatment plant operators for achieving excellent performance records in 1989:

OPERATOR	COMMUNITY
* Mr. Don Hotel	Austin
Mr. Herb Gerling & Mr. George Jago	Brandon

OPERATOR	COMMUNITY
Mr. Eugene Mayuk & Staff	Dauphin
* Mr. Lloyd Beckley	Gilbert Plains
Mr. John Waldner	Gladstone
Mr. Allan Simcoe	Lac du Bonnet
Mr. Percy Lea	Manitou
Mr. Elmer Pederson & Staff	Melita
* Mr. Shane Johnston	Morris
Mr. George Squires & Staff	Neepawa
Mr. Gary Odlum	Pilot Mound
Mr. Ken Moore	Reston
Mr. Harold Schrader	Russell
Mr. Don Doyle & Staff	Steinbach
Mr. Gordon Clark & Mr. Gordon Turner	Treherne
Mr. Lou Loewen	Winkler
Mr. Ron Pascal	Winnipegosis
Mr. Rudy Tomchuk	Gimli Industrial Park

* FIRST YEAR OF OPERATION.

The Department continued to issue Ministerial Approvals for the installation of fluoridating water treatment equipment in accordance with the regulations under the Manitoba Public Health Act.

8. Support Services

Manitoba Health/Dental Health wishes to acknowledge the support received from other groups and governmental departments which provided assistance with the performance of the Fluoridation Program:

i. The Technical Services Laboratory for conducting the regular fluoride analyses and the shipping of reagents, sample bottles and fluoride results to participating communities.

ii. The Manitoba Water Services Board for co-operating in the operation of 19 water treatment plants.

iii. Environmental Health Services, Manitoba Health for engineering consultation and advice with administration, design, installation and troubleshooting in-plant operational malfunctions.

iv. Administrative staff, Waterworks Chairmen and Councillors and especially water treatment plant operators in all communities with water fluoridation equipment. Their friendly co-operation and receptiveness to assistance offered by Dental Health technical staff has resulted in a better service to the residents of the communities participating in the program.

v. United States Centers for Disease Control National Fluoridation Engineer, Illinois State Department of Health Fluoridation Officer, Liquid Metronics Incorporated and F.E. Meyers Company technical staff, W.M. Ward Laboratories quality Assurance Co-ordinator, Department of Workplace Safety Industrial Hygiene Division, and the Manitoba Health Environmental Health Engineer for assistance with the Water Fluoridation Seminar.

Manitoba

Health

Dental Health

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Winnipeg, Manitoba, CANADA
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(204) 945-6685

COPY

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March 2, 1990

RE: 1989 FLUORIDATION CONTROL DATA FOR THE TOWN OF -

Attached, for your review is a data table summarizing the operation of the - fluoridation system for the 1989 operating year.

If you and your staff have any questions regarding this information or the operation of your fluoridation system you may call me at 945-1717.

Your water works superintendent - , has done an excellent job of maintaining the proper fluoride levels for the Town of - water supply for the 1989 operating year.

Yours truly,

Jim Senka
Fluoridation Officer

JS/sw

Attach.

c.c. Water Plant Operators

COPY

FLUORIDE CONTROL DATA - 1989

LOCATION -
CHEMICAL - NaF 3%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.26

FLUORIDATOR -W7T A-747
OPERATOR -
TELEPHONE -
CALCULATION - 13200

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 31-JAN 13	1.10	1.21	1.18	0.85	1.11
2.JAN 14-JAN 27	1.03	1.16	1.15	0.84	1.10
3.JAN 28-FEB 10	1.05	1.18	1.14	0.84	1.10
4.FEB 11-FEB 24	1.15	1.22	1.19	0.90	1.16
5.FEB 25-MAR 10	1.20	1.22	1.19	0.92	1.18
6.MAR 11-MAR 24	0.96	1.15	1.17	0.88	1.14
7.MAR 25-APR 07	1.10	1.18	1.29	0.91	1.17
8.APR 08-APR 21	1.05	1.18	1.19	0.91	1.17
9.APR 22-MAY 05	1.12	1.22	1.21	0.90	1.16
10.MAY 06-MAY 19	1.15	1.15	9.67	0.92	1.18
11.MAY 20-JUN 02	1.15	NOT AVAIL	1.19	0.97	1.23
12.JUN 03-JUN 16	1.27	NOT AVAIL	0.00	0.93	1.19
13.JUN 17-JUN 30	1.05	1.23	1.29	0.88	1.14
14.JUL 01-JUL 14	1.07	1.31	1.26	0.82	1.08
15.JUL 15-JUL 28	1.15	1.22	1.25	0.80	1.06
16.JUL 29-AUG 11	1.20	1.40	1.20	0.83	1.09
17.AUG 12-AUG 25	1.25	1.24	1.28	0.94	1.20
18.AUG 26-SEP 08	1.14	1.20	1.24	0.96	1.22
19.SEP 09-SEP 22	1.10	1.14	1.13	0.81	1.07
20.SEP 23-OCT 06	1.08	1.21	1.16	0.84	1.10
21.OCT 07-OCT 20	1.13	1.20	1.18	0.82	1.08
22.OCT 21-NOV 03	1.18	1.23	1.23	0.92	1.18
23.NOV 04-NOV 17	1.20	1.25	1.23	0.89	1.15
24.NOV 18-DEC 01	1.15	1.23	1.22	0.91	1.17
25.DEC 02-DEC 15	1.20	1.23	1.23	0.90	1.16
26.DEC 16-DEC 29	1.20	1.22	1.24	0.91	1.17
AVERAGE TO DATE	1.13	1.22	1.55	0.88	1.14
RANGE - LOW	0.96	1.14	1.13	0.80	1.06
TO DATE - HIGH	1.27	1.40	9.67	0.97	1.23

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	0.00%